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## NOTICE OF ALLOWANCE AND FEE(S) DUE

3017 7590 01/26/2010

BARLOW, JOSEPHS & HOLMES, LTD.  
101 DYER STREET  
5TH FLOOR  
PROVIDENCE, RI 02903

EXAMINER

FU, HAO

ART UNIT

PAPER NUMBER

3696

DATE MAILED: 01/26/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,699

08/11/2003

James Allen Charnley JR.

W012 P00898-US1

1698

TITLE OF INVENTION: PROCESS FOR THE SELECTION AND EVALUATION OF INVESTMENT PORTFOLIO ASSET ALLOCATION STRATEGIES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	04/26/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/604,699 08/11/2003 James Allen Charnley JR. W012 P00898-US1 1698

**TITLE OF INVENTION:** PROCESS FOR THE SELECTION AND EVALUATION OF INVESTMENT PORTFOLIO ASSET ALLOCATION STRATEGIES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	04/26/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
FU, HAO	3696	705-03600R

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

**NOTE:** The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,699	08/11/2003	James Allen Charnley JR.	W012 P00898-US1	1698
3017	7590	01/26/2010	EXAMINER	
BARLOW, JOSEPHS & HOLMES, LTD. 101 DYER STREET 5TH FLOOR PROVIDENCE, RI 02903			FU, HAO	
			ART UNIT	PAPER NUMBER
			3696	
DATE MAILED: 01/26/2010				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 871 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 871 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/604,699	CHARNLEY, JAMES ALLEN	
	<b>Examiner</b>	<b>Art Unit</b>	
	HAO FU	3696	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/05/2009.
2. ☒ The allowed claim(s) is/are 1,3-8,10,11 and 13-17.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

/Hani M. Kazimi/  
Primary Examiner, Art Unit 3691

### **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance: existing methods of identifying the value of an asset allocation strategy using comparative performance statistics invoke an algorithm (an equation) to generate "an answer" that identifies a single or limited set of allocation alternatives. The process is to solve for some maximum to identify the "optimum allocation". These algorithms found in the cited prior art use different sets of parameters to define this optimum. An algorithm commonly used is contained in the thesis, Modern Portfolio Theory, which produces a population of approximately 1% of the total available asset allocation alternatives population which had in a prior period the highest investment return as each point of risk across the breadth of investment risk. Since an algorithm, by definition, solves for only a limited subset of available allocation choices, and in many cases a single choice, it cannot provide performance statistics by which to compare the relative values across a whole-population of allocation alternatives. This means that they are not relevant to processes to compare asset allocation alternatives across multiple time periods. In other words, they cannot "see" the whole population of asset allocation alternatives and therefore are not pertinent to applicant's claimed invention. The present invention does not utilize algorithm approach like the prior arts do. Instead, the claimed invention constructs all possible allocation alternatives in order to generate comparative statistic of investment performance for the whole population and to find the asset allocations with desirable characteristics.

Specifically, Lear does construct an asset allocation strategy, and it fails to include a mechanism for generating comparative statistics of a whole population of allocation alternatives. Lear's method does not include either a process to provide investment performance data for a plurality of securities; or determine a series of periodic investment returns of each of the securities. Lear does not group these securities on the basis of this performance data into one of a plurality of market sectors, despite the examiner's assumption of implied grouping. Instead, the examiner's reference to this point refers to Lear's suggestion that the investor select candidate investments from difference market sectors as supplied by external sources. His process does not include a mechanism for defining or otherwise creating those market sectors.

Arbabi does not teach determining allocation alternatives from the application of multiples of this minimum allocation percentage increment. The prior art is devoid of a teaching of such a process in regard to investment management practice. Arbabi's process provides a system to effectively schedule resources in a complex resource constrained environment. The "allocation" in the prior art refers to one process of this system and pertains to the allocation of the amount of available system resources among a set of tasks. Arbabi does not teach determining alternatives to this system-resource allocation from the application of multiples of minimum allocation percentage increments. Arbabi's reference to "5% increments" noted in the office action pertains not to the division of these available system resources, but to a periodic sampling of the workflow, known as "the percent of the allocation completed", against the anticipated

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pace of that workflow. Arbabi divides the anticipated time into 5% increments, not the amount of system resources.

Gaini does not fix the deficiency of Lear and Arabi in that Gaini does not teach creating a list of the all possible allocation alternatives that can be determined from the application of all multiples of a minimum allocation percentage increment for all determined market sectors. More specifically, Gaini teaches a process to allocate the assets of an investment portfolio independently of the algorithm-solution outlined in Modern Portfolio theory. Gaini's process relies on the identification by the investor of membership to one of (6) "personality categories" which determines his tolerance for investment risk. Based on the investor's selection of a personality category, an asset allocation strategy is recommended based on the ranking of the available investments by risk. Thus, Gaini's system of recommending an asset allocation strategy based on membership of the investor to one of six personality categories does not generate comparative performance statistics of whole populations of allocation alternatives

Alcaly does not teach a method for constructing whole populations of asset allocation alternatives and his process does not include a method for ensuring that comparative statistics of investment performance are producing that are inclusive of those generated from a whole population of allocation alternatives. Alcaly teaches creating performance indices of asset classes that can be used by portfolio managers whose portfolios can contain short-interest positions. This is not the same as an asset allocation alternative, which is formed from combinations of asset classes,

Furthermore, the additional reference Klein fails to teach constructing a population of asset allocation alternatives to generate comparative statistics of investment performance for a whole-population of available asset allocation alternatives over a plurality of analysis periods, comprising the steps of:

- determining a minimum allocation percentage increment for each of the market sectors;

- determining allocation alternatives from the application of multiples of this minimum allocation percentage increment for each of the market sectors;

- creating a population of the all possible allocation alternatives that can be determined from the application of all multiples of this minimum allocation percentage increment for all determined market sectors;

- calculating a series of weighted-average periodic returns for each of the allocation alternatives within that population; and

- calculating analysis-period measures of investment performance for the population of all possible allocation alternatives and the series of weighted-average periodic returns.

In light of Figure 4 of applicant's submitted drawing, the above procedures describes a brute force application, in which the portfolio is constructed by comparing the weighted-average periodic return of all possible combinations of market sectors in various percentages.

In this sense, Wall et al. (Wall, Larry D, Reichert, Alan K, Mohanty, Sunil, Deregulation and the opportunities for commercial bank diversification, Economic



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Review – Federal Reserve Bank of Atlanta, Sep/Oct 1993, Vol. 78, Iss. 5; pg. 1, 25 pgs) teaches an example of combining two sectors in various percentages, in which the allocation of one sector ranges from 0 to almost 100 percent of the total assets (see page 3, 3<sup>rd</sup> full paragraph, page 5, 2<sup>nd</sup> full paragraph, and page 6, 1<sup>st</sup> paragraph).

However, the problem with the Wall reference is that the comparative statistical analysis is done on merely the resulting returns of combinations of bank company holding assets and nonbank industry assets, for the purpose of determining whether merging with nonbank firms would provide higher return and lower risk for the bank than one restricted to traditional banking activities. As such, Wall fails to teach determining a minimum allocation percentage increment for each of the market sectors, and creating a population of all possible allocation alternatives that can be determined from the application of all multiples of this minimum allocation percentage increment for all determined market sectors. The objective of such analysis is to determine whether commercial bank can diversify their activities by merging with nonbank firms to provide higher return and lower risk. The present application is different in that its purpose is to determine the best combination of allocation of securities, such as stocks and bonds, for an investor.

Regarding to the concept of brute force application, the examiner cited two more references related to this concept, namely Dantzig (George Dantzig, Linear Programing, Operations Research, Jan/Feb 2002, Vol. 50, Iss. 1; pg. 42, 7 pgs) and Taylor (Robert E Taylor, A practical approach to computerizing optimization problems, Industrial Management, Jul/Aug 1997, Vol. 39, Iss. 4; pg. 20, 4 pgs). Both the Dantzig reference

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and the Taylor reference discuss brute force application in statistic in general, but both the reference does not suggest such method can be applied to investment allocation.

Both reference disclose that if we can try all combinations and compare the solutions, we would simply select the “best” solution (see page 2 of Dantzig and page 2 of Taylor).

This is the general concept which inspires the development of present invention.

However, neither the Dantzig nor the Taylor reference teaches the specific steps of:

- determining a minimum allocation percentage increment for each of the market sectors;

- determining allocation alternatives from the application of multiples of this minimum allocation percentage increment for each of the market sectors;

- creating a population of the all possible allocation alternatives that can be determined from the application of all multiples of this minimum allocation percentage increment for all determined market sectors;

- calculating a series of weighted-average periodic returns for each of the allocation alternatives within that population; and

- calculating analysis-period measures of investment performance for the population of all possible allocation alternatives and the series of weighted-average periodic returns.

Moreover, the Dantzig and Taylor reference seem to teach away the use of brute force method, because "there is no way to determine what is a “better” solution; and there are too may combinations to try” (see page 2 of Dantzig and page 2 of Taylor).

Therefore, the examiner concludes that even though the concept of brute force

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application is not new, the application of such method in constructing investment portfolio is novel, and the applicant has overcome the difficulties of the prior arts by using the steps of:

determining a minimum allocation percentage increment for each of the market sectors;

determining allocation alternatives from the application of multiples of this minimum allocation percentage increment for each of the market sectors;

creating a population of the all possible allocation alternatives that can be determined from the application of all multiples of this minimum allocation percentage increment for all determined market sectors.

In such way, the number of possible combination alternatives becomes finite and possible for a super computer to calculate.

Therefore the combination of all cited references does not teach every limitation of the independent claims 1 and 8. Claims 3-7 depend on claim 1, and claims 10-11 and 13-17 depend on claim 8. Therefore claims 1, 3-8, 10-11, and 13-17 are in the condition of allowance.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAO FU whose telephone number is (571)270-3441. The examiner can normally be reached on Mon-Fri/Mon-Thurs 11:30am-8:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HANI KAZIMI can be reached on (571) 272-6745. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hao Fu  
Examiner  
Art Unit 3696

JAN-10

/Hao Fu/  
Examiner, Art Unit 3696

/Hani M. Kazimi/  
Primary Examiner, Art Unit 3691

Application/Control Number: 10/604,699  
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